WORKPLAN
for
Removal of
Underground Storage Tanks

Naval Weapons Industrial Plant
Calverton, New York

Contract No.: N62472-94-D-0398
Delivery Order #33

Revised July 25, 1997

PREPARED
for

Prime Contractor:
Foster Wheeler Environmental Corporation
2300 Lincoln Highway East
One Oxford Valley, Suite 200
Langhorne, PA 19047-1829

Client:
OICC
Northern Division, NAVFACENGCOM
10 Industrial Highway
Mail Stop #82
Lester, PA 19113-2090

PREPARED
by Subcontractor:

ENVIRO/CONSULTANTS GROUP, LTD.
262 Chapman Road, Suite 103-A
Newark, Delaware 19702
(302) 292-8995

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Section **Page**

1. INTRODUCTION

Enviro/Consultants Group, Ltd. (E/CGL) has prepared this work plan to outline the procedure for the removal of three (3) Underground Storage Tanks (USTs) and below ground piping at the Naval Weapons Industrial Plant, Calverton, New York. The associated above ground piping will remain for possible reuse by others. E/CGL will protect the aboveground piping from damage during the tank removals. The following procedures will be followed for tank removal:

- Excavate and stockpile existing stone overburden.
- Acetylene torch cutting tanks in the excavation and lifting tank pieces out of the excavation.
- Loading tank pieces on to trucks for off-site disposal.
- Restoration of work area.

If free product or other conditions are encountered in the excavation that would prevent torch cutting the tanks in place, Foster Wheeler/Navy will be informed. Foster Wheeler/Navy advice will be consulted on how to continue if torch cutting the tanks in place is not possible. The site specific work areas will include, but will not be limited to:

Work Location	**Tank Contents**
Fuel Depot - Tank # 7	Aviation Gasoline
Fuel Depot - Tank # 8	Aviation Gasoline
Fuel Depot - Tank # 9	Aviation Gasoline

These areas include the USTs, associated below ground piping and ancillary equipment. See **Attachment A:** ***Site Plan.***

2. STATUTES AND REGULATIONS

Removal of USTs will be conducted in strict compliance with the closure requirements contained in 40 CFR 280 as well as the State of New York and Suffolk County Regulations. Applicable regulations include but are not limited to:

40 CFR Part 280	Underground Storage Tanks: Technical Requirements; Final Rule.
6 NYCRR Part 612	Registration of Petroleum Storage Facilities.
6 NYCRR Part 612	Handling and Storage of Petroleum.
6 NYCRR Part 612	Standards for New and Substantially Modified Petroleum Storage Facilities.
Article 12	Suffolk County Sanitary Code

In addition, all work under this contract will be performed in accordance with the Industry Standards referenced below:

API Publ. 1604	*Removal and Disposal of Used Underground Petroleum Storage Tanks.*
API Publ. 2015A	*A Guide for Controlling the Lead Hazard Associated with Tank Entry and Cleaning.*
API Publ. 2217	*Guidelines for Confined Space Work in the Petroleum Industry.*
API Publ. 2219	*Safe Operating Guidelines for Vacuum Trucks in Petroleum Service.*
NFPA 30	*Flammable and Combustible Liquids Codes*
NFPA 327	*Standard Procedures for Cleaning or Safeguarding Small Tanks and Containers.*

2.1 Regulatory Notification

E/CGL will prepare the New York State Bulk Storage Closure Application and furnish to the Navy for signature and forwarding to New York State and Suffolk County. The closure application will be filed with the New York State Department of Environmental Conservation and Suffolk County Department of Health Services. New York State requires notification of a closure within thirty (30) days before tank closure. Suffolk County requires notification two (2) days before the work begins. Additionally, Suffolk County requests that they be notified of the time of day that the underground storage tanks are expected to be removed from the excavation. E/CGL will also inform the local Fire and Police Departments about the removal activities. **A copy of the UST removal notification form provided to the Navy is included in Appendix A.**

2.2 Final Closure Notification

After the completion of the closure activities E/CGL will complete a Post Removal Report to document the work accomplished.

3. PROJECT SCHEDULING

3.1 Project Schedule

The project will be executed diligently and will be completed as per the approved schedule. The time stated for the completion includes removal of the tanks and below grade piping, backfill of the excavation and the spreading of crushed stone from the excavation over the backfilled area. However, the receipt of all bill of lading, disposal manifest, and/or certificate of disposal of tanks and other debris during the UST closures is not included in the schedule. If contaminated soil is encountered in the excavation, Foster Wheeler/Navy will be informed and direction on how to continue will be requested concerning removal and off-site disposal. E/CGL will submit updated schedules as/and when significant changes are encountered

3.2 Working Hours

Work will be performed during daylight hours, Monday through Friday. No work will be performed on Government holidays and weekends, unless in extreme circumstances whereby appropriate request will be made to Foster Wheeler/Navy.

4. PROJECT MANAGEMENT / PERSONNEL

Contract administration and technical issues of the project will be provided by Mr. Ted Lindell, *Director of Constructions & Remediation* for E/CGL. Project supervision will be the responsibility of Mr. Mark Taylor or his designated and approved alternate. Mr. Taylor will manage the work force responsible for the removal of all tanks. Mr.Taylor or alternate will be the primary on-site official responsible for the completion of the project. Mr. Lindell will be the point of contact for all technical and administrative issues of this project.

Mark Taylor will also function as the site safety officer responsible for the safety of all field personnel.

5. REMOVAL OF USTs

The following steps will be strictly followed by E/CGL during the UST removals. The minimum steps outlined below to safely remove a tank are intended to prevent fire, explosion, or a release of a regulated substance to the environment and will be performed in a safe manner which will not disturb the adjacent property. Before beginning the project, all necessary safety precautions will be taken.

5.1 Location of Underground Utilities

E/CGL will identify the locations of the utilities in the field based on information provided by the Facility point-of-contact (POC), Al Taormina at (516) 346-0344 and from mark out by Miss Utility. At this point, E/CGL does not expect that any utility lines need to be shut down for completing the work. However, this determination will be made during field work. E/CGL will notify Foster Wheeler/Navy about such shut-offs. E/CGL will consult the Facility POC in locating the underground utilities. If unknown underground utilities and/or unidentified buried objects are encountered during excavation, the Site Safety Officer (SSO) will stop the excavation activities and immediately notify Foster Wheeler/Navy. The SSO will investigate the nature and extent of the encountered objects and determine suitable course of action. **E/CGL will notify Foster Wheeeler/Navy of any utility items identified in the field that do not appear on the drawings.**

5.2 Cleaning and Removal of Piping and other Ancillary Equipment

It is E/CGL's understading that all product has been removed from the USTs and below ground piping. **See Attachment B - Independent Testing and Consultation, Inc. Chemist Certificate.** E/CGL will confirm that the USTs and below ground piping are free of any product, liquids or tank sludges. If tanks and piping

are not free of liquids, Foster Wheeler/Navy will be informed of the condition and instructions on how to proceed will be requested.

5.3 Surface Preparation and Soil Removal

Based on dimension, size and location of the tank, an area will be marked for excavation to remove the tank. The fill material up to the top of the tank will be removed and stockpiled separately. If contaminated soil is encountered in the excavation, Foster Wheeler/Navy will be informed and direction on how to continue will be requested concerning removal and off-site disposal.

5.4 Tank Purging

Base on the scope of work, tanks are assumed to be gas free and clean. For tanks with man ways and vents, E/CGL will confirm whether the tanks are gas free and clean. The tanks were certified safe for workers in September 1992. **See Attachment B: Independent Testing and Consultation, Inc. - Chemist Certificate.** Foster Wheeler/Navy will be notified if the tanks are found to be other than gas free and clean. If necessary, E/CGL will request authority to use vacuum trucks to pump out the liquids from the tank. If water is present in any of the tanks, it will be pumped out separately from the liquids and stored for disposal.

Prior to removing any tank, the tank will be checked for explosive vapors by using a calibrated combustible gas indicator (CGI 260). Vapor concentrations will be measured in the upper one-third, middle one-third and lower one-third of the tank. The tank will be purged of vapors in accordance with the procedures listed in API's Recommended Practice 1604, and the local fire, health and safety codes/regulations. . Dry ice will be used for purging the tank. E/CGL will use dry ice at a rate of three pounds per 100 gallons of tank volume for the purging of tanks. Extreme caution will be taken when handling the dry ice. The use of insulated rubber gloves, safety goggles, and funneling devices will be used to dispense the dry ice into the tank. Purging of tank will continue until the percent LEL is less than 10%. All trucks, hoses, piping and equipment shall be electrically bonded to the UST. In the event the tank has been removed from the ground, the tanks, trucks, hoses, piping and equipment shall be bonded to a driven ground rod. Continuous air monitoring will be performed using a direct reading field-organic vapor analyzer or a Photo Ionization Detector (PID) and CGI. If hydrocarbon vapors are present, appropriate personal and public safety precautions will be taken by site workers to prevent unnecessary exposure to vapors and possible explosions.

Based on site conditions, an alternate method may be used to ventilate the tank by using a small gas exhauster operated by a portable air compressor. The method involves the flow of air in through an opening near one end of the tank, the discharge of the vapor/air mixture will flow out of the vent opening near the opposite end of the tank. The vent stand pipe will be set to an elevation minimum of 12 feet above grade. This method will quickly remove the vapor. The vapor concentration in the tank can be checked with a CGI to determine when the tank gases are acceptable. Prior to purging the tank , all ignition sources shall be eliminated from the immediate vicinity.

5.5 Excavation Plan

Excavation around the perimeter of the tank will be performed in a manner to minimize the size of the excavation. Surface water will be diverted to prevent direct entry into the excavation. To the extent possible, entry of surface water into excavation will be controlled using appropriate diversion methods. Temporary berms (cofferdams) will be used to minimize the entry of surface water. It is anticipated that groundwater elevation is about 15 to 20 feet below ground surface. If any water should be present in the excavations, it will be removed and stored for disposal. E/CGL assumes that groundwater will not be encountered in the excavations. If water should be encountered in the excavation, Foster Wheeler/Navy will be informed that the use of dewatering equipment may be necessary. It is not expected that shoring of the excavation will be necessary, since appropriate sloping will be employed during excavation.

5.6 Tank Removal

After the removal of any residual liquids from tanks and purged of any explosive vapors, the tank will be cut into pieces using acetyline torches. Tank pieces will loaded on to trucks for transport to the disposal facility. Steps for safe removal for tanks will be accomplished using the criteria contained in API's Recommended Practice #1604 " Removal of Used Underground Storage Tanks".

5.7 Tank Interior Cleaning (if necessary)

After purging, the tank interior will be cleaned of sludge until all loose scale and residue is removed. The cleaning procedures will conform with API Publication #2015 "Safe Entry and Cleaning of Petroleum Storage Tanks." All contaminated water resulting from cleaning operations will be collected with a vacuum truck and disposed of in accordance with applicable Federal, State, and local environmental regulations. E/CGL will ensure only certified confined space entry personnel enter the tanks. Personnel will be equipped with appropriate personal protective equipment. **(See Appendix B for Confined Space Entry procedures).** The tank will be cleaned if necessary when it is in the ground because it is more stable in the ground than outside. The chances of tank roll over are minimized by this procedure. In case of leaking tanks, the chances of product spills will be minimized by cleaning the tank in the excavation.

5.8 Tank Exterior Cleaning

Soil will be removed from the tank exterior to eliminate soil deposition on roadways during the transportation to the disposal facility. Soil, removed from the tanks, will be stockpiled, and if contaminated will be disposed off-site after approval by Foster Wheeler/Navy.

5.9 Tank Cutting

Tanks will be cut in place in the excavation using acetyline torches.

6. DISPOSAL OF WASTE

Based on the scope of work, it is anticipated that the tank removal will not generate any waste. If any waste is to be generated, Foster Wheeler/Navy will be made aware of this change. E/CGL , if necessary can provide all necessary labor material, transporting vehicles, and other equipment for the disposal of various streams of waste generated during the removal of USTs.

6.1 Contaminated Water

E/CGL will coordinate and arrange for the disposal of contaminated water resulting from the cleaning of tanks and potential dewatering operations. The contaminated water will be stored on-site in suitable containers. E/CGL will coordinate with Foster Wheeler/Navy for disposal of contaminated water.

6.2 Tank Debris

The tank will be cut into pieces and transported to a disposal facility. The tanks will be sent to the scrap yard for recycling as scrap metal. At this point, E/CGL has not identified the scrap yard for the recycling of tank and associated material:

6.3 Asphalt and Concrete Debris

E/CGL does not anticipate the disposal of any asphalt or concrete debris.

7. ENVIRONMENTAL PROTECTION

E/CGL will ensure that appropriate steps are adopted to minimize the cross media contamination and protect environmental resources through out the construction operations of this project.

E/CGL's environmental protection plan will provide for the protection of land resources, water resources, air resources and erosion control.

7.1 Protection of Land Resources

Land resources within the project limits shall be maintained in their present condition or shall be restored to lines and grades that existed before the tank removals. Construction activities will be confined to areas immediately adjacent to the work area. Damage to landscape features outside the work area shall be restored to their original condition to the satisfaction of Foster Wheeler/Navy. Upon the termination of tank removal, all disturbed areas shall be restored as nearly as possible to original condition. This will be accomplished by grading and filling, spreading of crushed stone over the backfilled excavation.

7.2 Protection of Water Resources

E/CGL will take appropriate measures to prevent any tank residues, liquids such as fuel oils, diesel fuel, gasoline, and other contaminated material from reaching drainage system, on-site creeks, open swales and other water conveyance features that may lead into off-site rivers, creeks, and streams. This will be accomplished by immediately containerizing any tank residues, and liquids. The containers will be stored in locations away from drainage outlets to the extent practical. Temporary berms or (cofferdams) will be built around the containers.

E/CGL will store appropriate spill response equipment on-site to immediately containerize any spill that may occur during the project. Such equipment will include oil and liquid absorbent pads and oil dry.

E/CGL will ensure that appropriate measures, such as silt fences or hay bales are set-up to control erosion of soil sediments during excavation and stock piles operations.

7.3 Protection of Air Resources

E/CGL does not expect significant chemical emissions or dust generation for this project that would cause concern of air pollution. The tanks have been identified as gas free and clean with very little residues that may cause fugitive emissions. Furthermore, if necessary the tanks will be purged with appropriate measures that would eliminate any possibility of fugitive emissions.

E/CGL will ensure that appropriate measures are implemented to control generation and migration of dust during excavation and stockpiling operations. E/CGL may erect temporary dust screens on the down wind sides of excavation to control dust migration. If weather conditions permit, E/CGL may use water sprinklers as dust suppressant.

At no time will burning be performed on-site during this project.

7.4 Erosion Control Plan

E/CGL does not expect significant erosion problems in most of the work areas. In areas of concern, E/CGL will use silt fence on down gradient side to control erosion of soil sediments. In all areas, E/CGL will ensure that catch basins and drainage structures are covered and protected during excavation activities to prevent eroded soil particles entering the drainage stream.

Areas of readily erodible soils exposed by construction operations will be kept to a minimum.

8. BACKFILLING

The tank excavations will be backfilled with clean fill. At the present time, backfill source areas have not been identified for this project.

8.1 Placement of Backfill

The bottom of excavation will be cleared of all debris prior to the placement of the backfill. The backfill material in the excavations will be placed in lifts not exceeding 8 inches. Each layer of backfill material will be compacted with the backhoe bucket.

8.2 Restoration of Disturbed Areas

Disturbed areas or excavated areas will be restored to existing grades with clean fill. The crushed stone removed from the tank excavation will be spread over the backfilled area.

9. SPILL PREVENTION PLAN

E/CGL will execute this project in a manner that will minimize any spillage of tank residues, liquids, contaminated water, and contaminated soil at any part of the site.

9.1 Spill Prevention Procedures

The following general spill prevention procedures will be followed during the project:

- Immediate containerization of tank residues and liquids using vacuum pumps.
- Allowing extra capacity in containers to avoid spillage by overflow.
- Placement of containers on top of plastic liners with temporary berms around the area to avoid overflow.
- The containers will be secured to prevent overflow or tip over in the transfer vehicles.

9.2 Spill Response Action

E/CGL will maintain on-site spill clean-up material through out the project. The spill clean-up kit will include oil and liquid adsorbent pads, shovels, broom, drums, tarps, and oil dry.

Foster Wheeler/Navy will be immediately informed of spills. If oil, tank residue or liquid spill occur, E/CGL will use adsorbent pads to contain the spill and containerize the used adsorbent pads. If a contaminated soil spill occurs, E/CGL will use shovels and brooms to containerize spilled material.

10. DECONTAMINATION

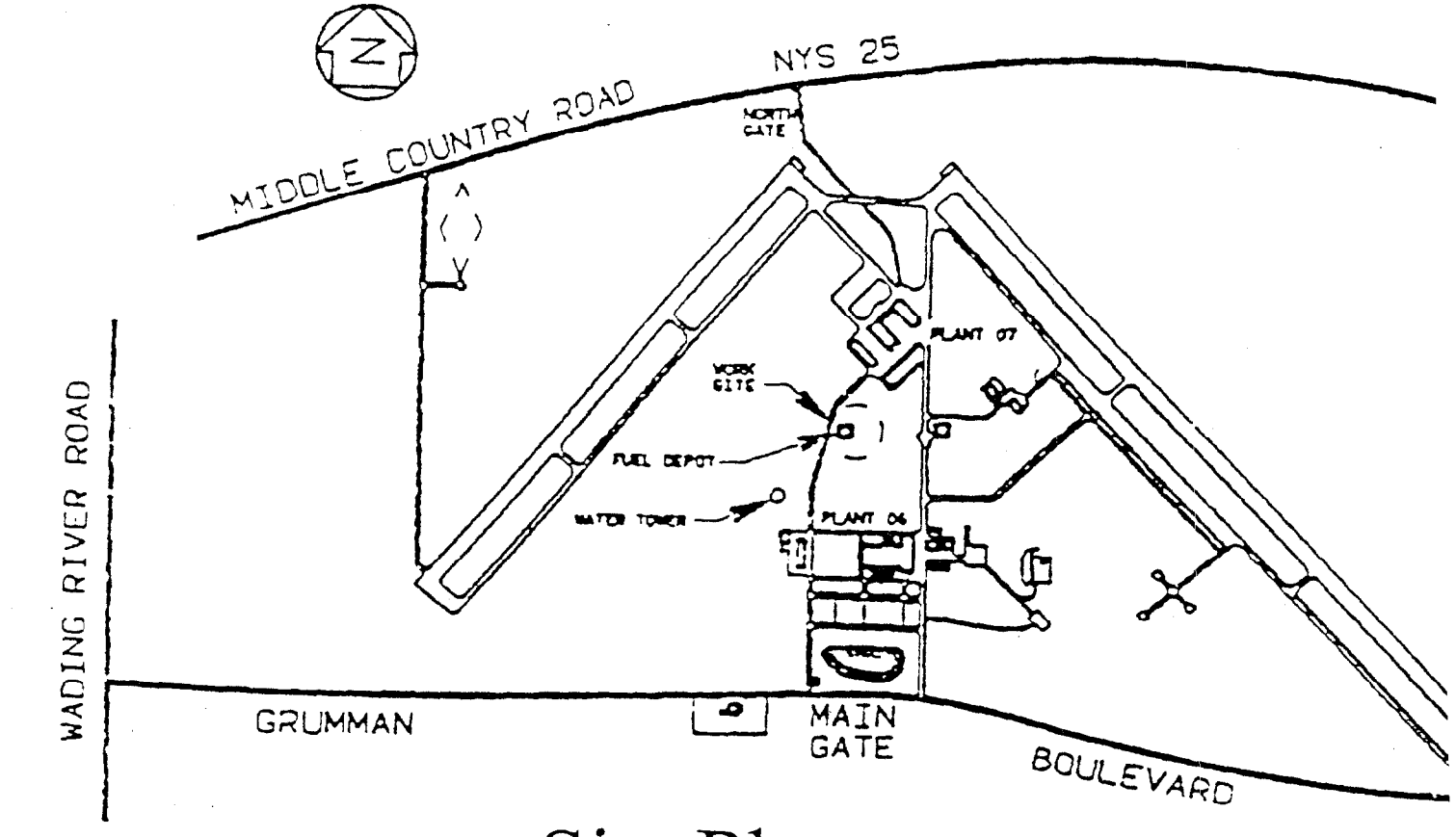
10.1 Equipment Decontamination

E/CGL does not expect extensive decontamination efforts for this project. The construction equipment decontamination will be limited to the parts that come in contact with contaminated material. The buckets of excavation equipment will be brushed down to remove all the soil and other particles. The brushing down will be accomplished on a plastic liner which allows for easy containment. The excavation equipment will be decontaminated after excavation activities.

10.2 Personnel Decontamination

Personnel decontamination will be required for those personnel that are involved in cleaning of tanks. Typically personnel involved with such activities will have necessary protective equipment. The decontamination will involve doffing of personal protective equipment. All of the personnel equipment except breathing apparatus or respirator will be of disposable type as such water wash may not be necessary. However, adequate water, brushes, soaps and containers for washing such as tubs will be available on-site through out the project.

ATTACHMENT A: SITE PLAN



Site Plan

NAVAL FACILITIES ENGINEERING COMMAND HERN DIVISION PHILADELPHIA, PA.	CONTR.
	SUB CONTR.
WEAPONS INDUSTRIAL	DESIGNED BY DATE ENVIRONMENTAL

ATTACHMENT B:

Independent Testing and Consultation, Inc.
Chemist Certificate

Independent Testing and Consultation Inc.
P.O. Box 539
Holmdel, N.J. 07733
BUS.: (908) 583-2538
NIGHTS: (908) 290-0415

CHEMIST CERTIFICA
SERIAL NO. 92-191

RICE TANK CLEANERS Survey Requested by	GRUMMAN Owner or Agent	9/23/92 Date
TANK #7 Vessel/Tank	U/G STORAGE Type of Vessel	GRUMMAN L CALVERTON Specific Location of Ves
JET "A" Product	CGI, O2, VISUAL, THC, BNZ Test Matrices	4:00 PM Time Survey Complete

STORAGE TANK #7

SAFE FOR WORKERS
NOT SAFE FOR HOT WORK *

COMBUSTIBLE GAS — 0% LFL
OXYGEN 20.8%
TOTAL HYDROCARBON < 60 ppm
BENZENE < 1 ppm.

* NOTE USE OF ELECTRICAL EQUIPMENT, GRINDERS, DRILLS etc. IS PERMITTED SANDBLASTING OF INTERIOR IS ALSO PERMITTED.

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Chemist

QUALIFICATIONS: Manipulation of valves or electric equipment landing to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, roof pontoons, support columns, floats, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA Subsections 1-6.1 through 1-6.4, and Subsection 5-9.2).

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Chemist's Certificate; and that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or have been treated in accordance with the Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

Lines have been blanked in accordance with API 2207 section 2.2.3. Repairs on tank bottoms must be treated in accordance with API 2207 section 4.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards and have found the condition of each to be in accordance with its assigned designation.

The undersigned acknowledges receipt of this Certificate and understands conditions and restrictions under which it was issued.

Signed J. Rice Rice Tank
Name

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Chemist

Independent Testing and Consultation Inc.
P.O. Box 539
Holmdel, N.J. 07733
BUS.: (908) 583-2538
NIGHTS: (908) 290-0415

CHEMIST CERTIFIC
SERIAL NO. 92-92

RICE TANK CLEANERS — Survey requested by
GRUMMAN — Owner or Agent
SEPT-22-9[illegible] — Date
TANK # 8 — Vessel/Tank
U/G STORAGE — Type of Vessel
GRUMMAN CALVERTON — Specific Location of
JP5 — Product
CGI; O2 VISUAL; THC; BNZ — Test Method
4:00P[illegible] — Time survey Comp

STORAGE TANK #8

SAFE FOR WORKERS
NOT SAFE FOR HOT WORK *

MAINTAIN VENTILATION.

COMBUSTIBLES GAS —— 0% LFL
OXYGEN 20.8%
TOTAL HYDROCARBON < 10ppm
BENZENE < 1ppm

* NOTE: SANDBLASTING OF INTERIOR, USE OF ELECTRICAL EQUIPMENT GRINDERS ETC IS PERMITTED.

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Chemist.

QUALIFICATIONS: Manipulation of valves or closure equipment leading to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, roof pontoons, support columns, floats, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA Subsections 1-6.1 through 1-6.4, and Subsection 5-3.2).

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Chemist's Certificate; and that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or have been treated in accordance with the Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

Lines have been blanked in accordance with API 2207 section 2.2.3. Repairs on tank bottoms must be treated in accordance with API 2207 section 4.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards and have found the condition of each to be in accordance with its assigned designation.

The undersigned acknowledges receipt of this Certificate and understands conditions and instructions under which it was issued.

Signed [signature] Name — Rice Tank Company

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed _____

Independent Testing and Consultation Inc.
P.O. Box 539
Holmdel, N.J. 07733

BUS.: (908) 583-2538
NIGHTS: (908) 290-0415

CHEMIST CERTIFICA
SERIAL NO. 92-193

RICE TANK CLEANERS Survey Requested by	GRUMMAN Owner or Agent	SEPT-28-92 Date
TANK #9 Vessel/Tank	U/G STORAGE Type of Vessel	GRUMMAN GRUMMAN Specific Location of Ves
JP-4 Product	CGI; O2; VISUAL; THC; BNZ Test Method	4:00PM Time Survey Complete

STORAGE TANK #9	SAFE FOR WORKERS NOT SAFE FOR HOT WORK * ~~ENTER~~ MAINTAIN VENTILATION.

COMBUSTIBLE GAS — 0% LEL
OXYGEN 20.8%
~~EXPLOSIVE~~
TOTAL HYDROCARBON — < 10 ppm.
BENZENE < 1 ppm.

* NOTE USE OF ELECTRICAL EQUIPMENT GRINDERS, DRILLS etc IS PERMITTED SANDBLASTING OF TANK INTERIOR IS PERMITTED.

In the event of any physical or atmospheric changes adversely affecting the STANDARD SAFETY DESIGNATIONS assigned to any of the above spaces, or if in any doubt, immediately stop all work and contact the undersigned Chemist.

QUALIFICATIONS: Manipulation of valves or closure equipment leading to alter conditions in pipe lines, tanks or compartments subject to gas accumulation, unless specifically approved in this Certificate, requires inspection and endorsement or reissue of Certificate for the spaces so affected. All lines, vents, heating coils, valves, roof pontoons, support columns, floats, and similarly enclosed appurtenances shall be considered "not safe" unless otherwise specifically designated.

STANDARD SAFETY DESIGNATIONS (partial list, paraphrased from NFPA Subsections 1-6.1 through 1-6.4, and Subsection 8-8.2),

SAFE FOR WORKERS: Means that in the compartment or space so designated: (a) the oxygen content of the atmosphere is at least 19.5 percent by volume; and that, (b) toxic materials in the atmosphere are within permissible concentrations; and that, (c) the residues are not capable of producing toxic materials under existing atmospheric conditions while maintained as directed on the Chemist's Certificate.

NOT SAFE FOR WORKERS: Means that in the compartment or space so designated, the requirements of Safe for Workers have not been met.

ENTER WITH RESTRICTIONS: Means that in any compartment or space so designated, entry for work may be made only if conditions of proper protective equipment, clothing, and time are as specified.

SAFE FOR HOT WORK: Means that in the compartment so designated: (a) oxygen content of the atmosphere is at least 19.5 percent by volume, with the exception of inerted spaces or where external hot work is to be performed; and that, (b) the concentration of flammable materials in the atmosphere is below 10 percent of the lower flammable limit; and that, (c) the residues are not capable of producing a higher concentration than permitted by (b) above under existing atmospheric conditions in the presence of fire, and while maintained as directed on the Chemist's Certificate; and that, (d) all adjacent spaces containing or having contained flammable or combustible materials have been cleaned sufficiently to prevent the spread of fire, or are satisfactorily inerted, or have been treated in accordance with the Chemist's requirements.

NOT SAFE FOR HOT WORK: Means that in the compartment so designated, the requirements of Safe for Hot Work have not been met.

Lines have been blanked in accordance with API 2207 section 2.2.1. Repairs on tank bottoms must be treated in accordance with API 2207 section 4.

CHEMIST'S ENDORSEMENT. This is to certify that I have personally determined that all spaces in the foregoing list are in accordance with NFPA 306 Control of Gas Hazards and have found the condition of each to be in accordance with its assigned designation.

The undersigned acknowledges receipt of this Certificate and understands conditions and limitations under which it was issued.

Signed _____ RICE TANK
Name

This Certificate is based on conditions existing at the time the inspection herein set forth was completed and is issued subject to compliance with all qualifications and instructions.

Signed _____

APPENDIX A:

UST Removal Notification and Closure Form

ENVIRO/CONSULTANTS GROUP, LTD.
262 Chapman Road, Bellevue Building, Suite 103-A
Newark, Delaware 19702
Ph: (302) 292-8995 • FAX: (302) 292-8996

July 24, 1997

Mr. Marshall Levitan
Commander, Naval Air Systems Command
1213 Crystal Drive
Crystal Gateway 4, Suite 1414
Arlington, Virginia 22202

Dear Mr. Levitan:

As instructed by Mr. Arthur Holcomb, Foster Wheeler Environmental Corporation, enclosed is a completed New York State Petroleum Bulk Storage Application form. This form will provide notification to both New York State and Suffolk County that three (3) 50,000-gallon underground storage tanks will be removed from the former Naval facility in Calverton, New York. Please sign on page 1 as "the owner or authorized representative," date and mail a copy of the form to the following:

- New York State Department of Environmental Conservation
  Region 1
  SUNY Campus
  Loop Road Buliding 40
  Stony Brook, New York 11790-2356

- Mr. John Gladyse
  Suffolk County Department of Health Services
  15 Horseblock Place
  Farmingville, New York 11738

Also, please fax to me at (302) 292-8996 a copy of page 1 of the form after you have signed.

Sincerely,

Richard J. Connell, Jr.

Richard J. Connell, Jr., P.E.
Vice president, Technical Operations

Enclosure

Copy: Mr. Arthur B. Holcomb
Foster Wheeler Environmental Corporation

93-19-1 (5/95)—26c

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

INSTRUCTIONS FOR COMPLETING PETROLEUM BULK STORAGE APPLICATION

Please type or print all items, except "signature" in Section A. This form must be completed for each applicable petroleum facility. Forward completed applications to the appropriate DEC Regional Office. Use one form if there are 15 or less regulated tanks at a facility. For more than 15 regulated tanks at a facility, use additional forms as required. A site plan including tank numbers should be enclosed. **Instructions for Section B are on the reverse side.**

SECTION A

Item Name	Specific Instructions
PBS NUMBER	Enter the seven digit DEC Registration Number if the facility was previously registered; otherwise, leave blank.
OTHER EXISTING DEC NUMBERS	**CBS Number:** Enter the Chemical Bulk Storage Number if the facility has been registered under the Hazardous Substance Bulk Storage Law, Article 40 of ECL; 6 NYCRR Parts 595-599. If not applicable, write "Not Applicable". **SPDES Number:** Enter the number which has been assigned to a facility under the State Pollutant Discharge Elimination System, Article 17, Title 8 of ECL, 6 NYCRR Parts 750-758. If not applicable, write "Not Applicable".
TRANSACTION TYPE	
Initial/New Facility:	First application for registration by the owner of a regulated facility. PBS Number will be assigned by DEC.
Change of Ownership:	Application for registration by the new owner of the facility being transferred. Be sure to enter the PBS Number from the existing registration certificate and complete all sections.
Substantial Tank Modification:	Complete this section if one of the following applies: (1) one or more new stationary tanks has been added to the facility; or (2) an existing stationary tank has been replaced, reconditioned or permanently closed. In Section A, only complete the Facility Section and PBS Number. Be sure to provide the signature of a duly authorized officer. In Section B, fill in the entire line of information for each tank being amended.
Information Correction:	If any information changes have occurred since the initial application or the last renewal, include the corrected information in the appropriate spaces and be sure to include the PBS Number. In Section A, the signature of a duly authorized officer must be provided.
Renewal:	Application is being made for a previously registered facility that has not changed ownership since the last registration. Registration certificates for petroleum bulk storage facilities must be renewed every five years and are not transferable. Indicate any changes that may have occurred since last renewal and provide the signature of the duly authorized officer.
GEOGRAPHICAL LOCATOR	Indicate the actual latitude and longitude for the facility. This includes the degrees, minutes and seconds of the location. If known, please provide
FACILITY INFORMATION	Enter the name and location (NO PO Boxes, please) of the facility. Include any information that would assist in locating the facility. For county, enter the county in which the facility is located. For township, enter the geographical location, not the mailing city. Enter the facility telephone number and the name of the operator at the facility who is familiar with the tanks and the efforts of the business to comply with provisions of Article 17, Title 10 of the Petroleum Bulk Storage Law, 6 NYCRR Parts 612-614 and 6 NYCRR, Subpart 360-14 (used oil only).
OWNER INFORMATION	Name, address and telephone number of the company which owns the facility. Federal Tax Identification Number is the number assigned by the Internal Revenue Service. It is required by New York State Department of Tax and Finance. For owner type, check the appropriate box. Note: apartment buildings are considered corporate/commercial.
MAILING CORRESPONDENCE	Enter the desired mailing name and address for correspondence (i.e. Certificates, Tank Bulletin) and the name of the contact person who is familiar with the efforts of the business to comply with the provisions noted in Facility Information above.
TYPE OF PETROLEUM FACILITY	Check the appropriate box(es). If other, specify the type of facility in the space provided.
NAME AND OFFICIAL TITLE OF OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE	Please type or print both name and title. An application submitted by a corporation must be signed by a principal executive officer of at least the level of vice president or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility. In the case of a partnership or sole proprietorship, the application must be signed by a general partner or the proprietor, respectively. In the case of a municipality, state or other public facility, the application must be signed by either a principal or executive officer, ranking elected official or other duly authorized employee.
AMOUNT ENCLOSED	For Transaction Types 1, 2 and 5, please indicate the enclosed fee. Make check/money order payable to NYSDEC. The fee is based on combined petroleum tank storage capacity* at the facility in gallons: 1,101-2,000 gallons--$50/facility, 2,001-4,999 gallons—$150/facility, 5,000-399,999 gallons—$250/facility. * NOTE: Product Type C (used oil) is not subject to registration fee. See product stored (Section B) for examples.
SIGNATURE AND DATE	Signature of the owner or duly authorized officer is required, along with the date the application was prepared.

INSTRUCTIONS FOR COMPLETING PETROLEUM BULK STORAGE APPLICATION

(Continued from reverse side)

SECTION B

Item Name	Specific Instructions
GENERAL INSTRUCTIONS	Enter all the information (see KEY of choices for certain items, at the bottom of Section B). Use one complete line for each tank at the facility. Enter one choice per block. Make only one entry per item, except for tank external protection, piping external protection, secondary containment, leak detection and spill/overfill prevention.
ACTION	**1. Initial Listing:** For initial registration, renewal, or change of ownership of a facility. **2. Add Tank:** For installing a new tank at a facility. **3. Close/Remove Tank:** For permanently closing a tank per 6 NYCRR section 613.9(b), or conversion to non-regulated substance/use. **4. Information Correction:** If any information changes have occurred since the initial application or last renewal for any tank, include the corrected information in the appropriate spaces and be sure to include the tank number. **5. Recondition/Repair/ Reline Tank:** For reconditioning a tank per 6 NYCRR section 614.6 (underground tanks) and 614.12 (aboveground tanks), i.e. permanent repair and/or relining.
TANK NUMBER	Use the tank numbering system at the facility. If none exists then establish one i.e. 001, 002, etc. Any combination of letters and numbers is acceptable, except "000" or duplicate tank numbers at the same facility.
TANK LOCATION	See 6 NYCRR section 612.1(c)(1), and (29) for specific definitions of aboveground and underground tanks, respectively. 1. Aboveground: Tank bottom rests on grade or pad, allowing no visual inspection. 2. Aboveground on saddles, legs, stilts, rack, or cradle: Tank bottom rests above grade or pad, allowing visual inspection. 3. Aboveground, 10% or more belowground: Aboveground less than 90% above grade, partially buried. 4. Underground: Completely covered with earth or vaulted with no access. 5. Underground, vaulted, with access: Tank in subterranean vault, accessible for inspection
STATUS	If a tank is permanently out of service (Status 3 or 4), it must be closed pursuant to 6 NYCRR section 613.9(b). If not closed as such, it may be considered temporarily out-of-service (Status 2). See section 613.9 for further closure details. Status 5 refers to a product stored in the tank that is no longer regulated under the definition of petroleum in 6 NYCRR section 612.1(c)(21).
INSTALLATION OR PERMANENT CLOSURE DATE	For Action 1, 2, 4 or 5, specify the month and year the tank was completely installed. If unknown, enter 0000. For Action 3 (Closure), enter the month and year the tank was permanently closed, or converted to non-regulated substance/use.
CAPACITY	Specify the total design or maximum capacity of the tank in gallons.
PRODUCT STORED	Used oil examples: B(fuel)—fed into burners or space heaters; G—hauled away by waste hauler. See amount enclosed (Section A) regarding fees.
TANK TYPE	If tank type is unknown, or tank is coated or painted steel, enter 1. Tank Type requirements for new underground and aboveground tanks are specified in 6 NYCRR section 614.2a(1) and 614.8a(1), respectively. Tank Type 6 requires a variance before installation per 6 NYCRR section 614.1(e).
TANK—INTERNAL PROTECTION	Specify the type of protection provided for the tank to prevent internal corrosion. Refer to 6 NYCRR sections 614.12 and 614.6 for aboveground and underground tank requirements, respectively.
TANK—EXTERNAL PROTECTION	Specify the type(s) of protection provided for the tank to prevent external corrosion. Refer to 6 NYCRR sections 614.9(b) and 614.3(e) for aboveground and underground tank requirements, respectively.
PIPING LOCATION	1. Aboveground: Piping rests on or above ground, or pad. 2. Underground: Completely covered with earth. 3. Aboveground/Underground Combination: Piping is both aboveground and underground.
PIPING TYPE	Refer to 6 NYCRR section 614.14(a) for piping requirements for new underground piping systems.
PIPING—INTERNAL PROTECTION	Specify the type of protection provided for the pipe to prevent internal corrosion.
PIPING—EXTERNAL PROTECTION	Specify the type(s) of protection provided for the pipe to prevent external corrosion.
SECONDARY CONTAINMENT	Refer to 6 NYCRR section 613.3(c)(6) for secondary containment requirements for aboveground tanks. For new underground storage tanks, see 6 NYCRR section 614.4. For the two available entries of this category, select the supporting structure use for secondary containment as the first entry and, if different, enter the means of obtaining impermeability as the second entry.
LEAK DETECTION	Refer to 6 NYCRR section 614.11 regarding the monitoring requirements for new aboveground tanks. Refer to section 614.5 for new underground tanks.
SPILL/OVERFILL PREVENTION	Refer to 6 NYCRR section 614.14(g)(1) on spill/overfill prevention requirements for new underground tanks. See section 613.3(c) on additional spill/overfill requirements for new and existing underground and aboveground tanks.
DISPENSER METHOD	Specify method/pump used to remove product from tank.
LAST TEST DATE	For underground tanks, enter the month and year of the most recent tightness test performed per 6 NYCRR section 613.5(a). This entry does not satisfy the requirement for notification of test results. Calculations, along with the test report, must be submitted to DEC if they have not already been. Note that not all underground tanks require testing. Refer to 6 NYCRR section 613.5(a).

92-18-1 (8/95)—26c

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF SPILLS MANAGEMENT • BUREAU OF SOURCE CONTROL

PETROLEUM BULK STORAGE APPLICATION

Pursuant to the Petroleum Bulk Storage Law,
Article 17, Title 10 of ECL; 6 NYCRR 612-614 and 6 NYCRR, Subpart 360-14.
(Continued on Reverse Side—Please Be Sure to Complete Section B)

Please Type or Print Clearly and Complete All Items

SECTION A—See Instructions on Cover Sheet

FBS NUMBER

Indicate Other Existing DEC Numbers, If any, for this Facility:

CBS Number:

SPDES Number:

TRANSACTION TYPE (Check all that apply)
NOTE: Transaction Types 1, 2 and 5 may require a fee.

1. [ ] Initial/New Facility
2. [ ] Change of Ownership
3. [X] Substantial Tank Modification
4. [ ] Information Correction
5. [ ] Renewal

Geographical Locator for this Facility: (If known)

LATITUDE: DEG MIN SEC

LONGITUDE: DEG MIN SEC

FACILITY

NAME: J.A. Jones, Inc.

LOCATION (Not P.O. Boxes): Mail Stop A-41-03

LOCATION (Continued): Grumman Aerospace Corporation

CITY/TOWN/VILLAGE: Bethpage | STATE: NY | ZIP CODE: 11714

COUNTY: Suffolk | TOWNSHIP OR CITY:

NAME OF OPERATOR AT FACILITY: Al Taormina | FACILITY TELEPHONE NUMBER: (516) 346-0344

EMERGENCY CONTACT NAME: | EMERGENCY CONTACT PHONE NO.: ( )

OWNER

NAME: Commander, Naval Air Systems Command

ADDRESS (Street and/or P.O. Box): 1213 Crystal Drive
Crystal Gateway 4, Suite 1414

CITY: Arlington | STATE: VA | ZIP CODE: 22202

FEDERAL TAX ID NO. | OWNER TELEPHONE NUMBER: (703) 604-1104 x 2315

TYPE OF OWNER (Check only one)
1 [ ] Private Resident 2 [ ] State Government 3 [ ] Local Government
4 [X] Federal Government 5 [ ] Corporate/Commercial

MAILING CORRESPONDENCE

ATTENTION: Mr. Marshall Levitan

NAME OF COMPANY: Commander, Naval Air Systems Command

ADDRESS: 1213 Crystal Drive

ADDRESS: Cfystal Gateway 4, Suite 1414

CITY/STATE/ZIP CODE: ARlington, VA 22202

TELEPHONE NUMBER: (703) 604-1104, x 2315

TYPE OF PETROLEUM FACILITY:
(Check all that apply)

A. [ ] Storage Terminal/Petroleum Distributor
B. [ ] Retail Gasoline Sales
C. [ ] Other Retail Sales
D. [ ] Manufacturing
E. [ ] Utility
F. [ ] Trucking/Transportation
G. [ ] Apartment Building
H. [ ] School
I. [ ] Farm J. [ ] Private Residence
K. [ ] Airline (Air Taxi) L. [X] Other (Specify)
Former U.S. Navy AViation Fuel Storage

I hereby certify under penalty of perjury that the information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

NAME OF OWNER OR AUTHORIZED REPRESENTATIVE | AMOUNT ENCLOSED: $ 0

TITLE

SIGNATURE | DATE

OFFICIAL USE ONLY

Page _____ of _____

Date Received: ____/____/____

Date Processed: ____/____/____

Amount Received $ _____

Reviewed By: _____

PBS NUMBER:

Tank Information for Petroleum Bulk Storage Facility

SECTION B—See Instructions on Cover Sheet

Action	Tank Number	Tank Location	Status	Installation or Permanent Closure Date (MO)		(YR)		Capacity (Gallons)	Product Stored	Tank Type	Tank Internal Prot.	Tank External Protection		Piping Location	Piping Type	Piping Internal Prot.	Piping External Protection		Secondary Containment		Leak Detection		Spill/ Overfill Prevention		Dispenser	Last Leak Test Date (underground Tanks) (MO)		(YR)	
3	06-12-8	4	3	0	8	9	7	50,000	0	1	1		2	3	2	0		5		0		1		5	2				
3	06-12-9	4	3	0	8	9	7	50,000	0	1	0		0	3	2	0		0		0		0		0	2				
3	06-12-10	4	3	0	8	9	7	50,000	0	1	0		0	3	2	0		0		0		0		0	2				

KEY FOR SECTION B

ACTION
1 Initial Listing
2 Add Tank
3 Close/Remove Tank
4 Information Correction
5 Reconditioned/Repair/ Reline Tank

TANK LOCATION
1 Aboveground
2 Aboveground on saddles legs, stilts, rack, or cradle
3 Aboveground; 10% or more below ground
4 Underground
5 Underground, vaulted, with access

STATUS
1 In service
2 Temporarily out of service
3 Closed—Removed
4 Closed - In Place
5 Tank Converted to Non-Regulated Use

PRODUCT STORED
0 Empty
1 Leaded Gasoline
2 Unleaded Gasoline
3 Nos. 1, 2, or 4 Fuel Oil
4 Nos. 5 or 6 Fuel Oil
5 Kerosene
6 Diesel
A Lube Oil
B Used Oil (fuel)
C Used Oil
9 Other*

TANK TYPE
1 Steel/Carbon Steel
2 Stainless Steel Alloy
3 Concrete
4 Fiberglass Coated Steel
5 Fiberglass Reinforced Plastic (FRP)
6 Equivalent Technology
9 Other*

PIPING TYPE
0 None
1 Steel/Iron
2 Galvanized Steel
3 Fiberglass (FRP)
4 Copper
9 Other*

INTERNAL PROTECTION: Tank/Piping
0 None
1 Epoxy Liner
2 Rubber Liner
3 Fiberglass Liner (FRP)
4 Glass Liner
9 Other*

EXTERNAL PROTECTION: Tank/Piping
0 None
1 Painted/Asphalt Coating
2 Sacrificial Anode
3 Impressed Current
4 Fiberglass
5 Jacketed
6 Wrapped (Piping)
9 Other*

PIPING LOCATION
0 None
1 Aboveground
2 Underground
3 Aboveground/Underground Combination

SECONDARY CONTAINMENT
0 None
1 Vault
2 Double-Walled Tank
3 Excavation Liner
4 Cut-off Walls
5 Impervious Underlayment
6 Earthen Dike
7 Prefabricated Steel Dike
8 Concrete Dike
A Synthetic Liner
B Natural Liner
9 Other*

LEAK DETECTION
0 None
1 Interstitial Monitoring
2 Vapor Well
3 Groundwater Well
4 In-tank System
5 Concrete Pad w/channels
6 Double Bottom
9 Other*

SPILL/OVERFILL PREVENTION
0 None
1 Float Vent Valve
2 High Level Alarm
3 Automatic Shut-off
4 Product Level Gauge
5 Catch Basin
6 Vent Whistle
9 Other*

DISPENSER
1 Submersible
2 Suction
3 Gravity

* If Other, please list on separate sheet including the Tank Number

APPENDIX B:

Confined Space Entry Procedures

E/CGL
Confined Space Entry Policy

Purpose

To provide for the safety of all personnel involved with confined space entries.

To implement the regulations as required by OSHA 29 CFR 1910.146 - Permit Required Confined Space

1 Scope

This policy applies to E/CGL employees, subcontractors and their employees.

2 Definitions

2.1 Permit Required Confined Space

An enclosed space which has the following characteristics:

- Is large enough so that an employee can enter and perform assigned work, and
- Has limited or restricted means for entry or exit, and
- Is not designed for continuous employee occupancy, and

May have one or more of the followings conditions:

- Contains or potentially contains a hazardous atmosphere
- Contains a material with the potential for engulfment
- has an internal configuration such that an entrant could be trapped or asphyxiated
- contains any other recognized serious safety or health hazard

2.2 Confined Space Attendant (C.S.A.)

An individual assigned to monitor activities of personnel working in a confined space. The C.S.A. monitors and provides external assistance to those inside the confined space. The C.S.A. can terminate any confined space entry, summon rescue personnel in the event of an emergency and assists the rescue team or perform a non-entry rescue.

2.3 Confined Space Authorized Entrant (CSAE)

An individual who is authorized by the employer to enter a permit required confined space.

2.4 Confined Space Supervisor

An individual who is authorized by the employer to be responsible for determining if acceptable ent conditions are present at the permit space, for authorizing and canceling the entry permit and overseeing tl entry operations. Confined space supervisor may also serve as an attendant or an authorized entrant.

2.5 Entry

Entry into a confined space occurs as soon as any part of the entrant's body breaks the plane of an openin into the space.

2.6 Entry Permit

A printed document which defines the conditions under which a confined space may be entered, states th reason for entry, anticipated hazards, personnel involved and length of time for which the permit is valid.

2.7 Hazardous Atmosphere

An atmosphere that may expose employees to the risk of death, incapacitation, impairment of ability to self-rescue, injury, or acute illness from one or more of the following:

- Flammable gas, vapor, or mist in excess of 10% of its Lower Flammable Limit (LFL);
- Airborne combustible dust at a concentration that meets or exceeds its LFL;
- Atmospheric oxygen concentration below 19.5% or above 23.5%;
- Atmospheric concentrations of any substance for which there is a Permissible Exposure Limit (PEL) or published dose that could result in employee exposure in excess of its PEL or dose.
- Immediately Dangerous to Life and Health (IDLH) conditions.

3 Policy

3.1 Entry permits

3.1.1 An entry permit shall be completed whenever a entry into a confined space is to be performed. (Enclosure1).

3.1.2 Entry permits shall be issued by Site Safety and Health Officer.

3.1.3 The entry permit shall be completed by the entrants prior to any entry into a permit required confined space.

3.1.4 Each completed entry permit shall be approved by the Confined Space Supervisor (CSS) prio to the start of the entry.

3.1.5 Upon Completion of the operation the entry permit shall be canceled by the Confine Spac Supervisor and forwarded to the Site Safety and Health Officer for filing.

3.2 Posting/Guarding

3.2.1 *A "Danger: Confined Space - Entry Permit Required"* sign shall be posted at the entranc to the confined space.

3.2.2 Whenever the access hole is flush with a floor or ground surface, or is in pedestrian c vehicular passageway the area shall be roped or barricaded.

3.3 Hazard Evaluation

3.3.1 The atmosphere inside the confined space shall be remotely monitored for hazards prior t each entry and throughout the operation.

3.3.2 Direct reading instruments shall be used for oxygen concentration, combustible gases an potential toxic contaminants.

3.3.3 All monitoring equipment shall be maintained, calibrated, and operated in accordance wit manufacturers specifications.

3.3.4 If any equipment malfunctions or appears to malfunction, the entry shall be terminated unti the situation can be corrected.

3.4 Hazard Isolation

3.4.1 Actions to isolate confined space hazards shall be performed prior to entry. These include but are not limited to, blanking or blinding, double block and bleed or lockout and tag. See section 2.5: Electric Hazard; "**Lockout/Tagout**".

3.4.2 If the confined space is determined to contain a hazardous atmosphere then forced ventilation shall be used to reduce or eliminate the hazard.

3.4.3 If forced ventilation cannot be used or is not effective, then the Site Safety and Health Officer shall determine the appropriate level of personal protective equipment required ti perform the task.

3.5 Communications

3.5.1 Communications between the confined space attendant (C.S.A.) and confined spac authorized entrant (CSAE) shall be continuously maintained through visual means, 2-wa radio or other equivalent methods.

3.5.2 The confined space attendant (C.S.A.) shall also have immediate availability o communication devices to contact rescue services.

3.6 Medical Requirements

3.6.1 Any member of a confined space entry team (i.e. CSS, CSAE, C.S.A.) who will require respiratory protection to perform the entry will follow the medical requirements for 29 CFR 1910.134 *Respiratory Protection.*

3.7 Training Requirements

3.7.1 All entry team members shall receive initial training in the identification of confined spaces and the requirements of this policy.

3.7.2 All confined space entry team members shall receive refresher training whenever there is a change in the confined space entry operations the present a hazard for which they have not yet been trained for, the employee's duties and or responsibilities have changed, or when evaluation of this policy identifies inadequacies in the employee's knowledge.

3.7.3 In addition, confined space attendants (C.S.A.) shall be Red Cross certified in First Aid and Cardio-Pulmonary Resuscitation (CPR).

3.8 Rescue

3.8.1 Rescue teams trained in confined space responses must be available to assist the confined space attendants (C.S.A.) in emergency situations.

3.8.2 Rescue teams that are a part of a fire department, Had-Mat team or other outside agency shall be informed of the hazards associated with the confined space prior to the start of any activities.

3.9 Contractors

3.9.1 If non-E/CGL employees must enter the confined space, then E/CGL shall provide them with available information on the permit space hazards and a copy of this policy.

3.9.2 Subcontractors shall be required to meet all applicable regulations associated with the entry and shall be responsible for providing all necessary personnel and safety equipment for the entry.

Enclosure 1

E/CGL
CONFINED SPACE ENTRY
WORK PRACTICE GUIDELINE

A confined space provides the potential for unusually high concentrations of contaminants, explosive atmospheres limited visibility, and restricted movement. This section establishes guidelines for safe entry into, continued worl in, and safe exit from confined spaces.

Definitions

Attendant: The individual who enters the permit space who monitors the authorized entrants.

Authorized entrant: An individual who enters the permit space.

Entry Supervisor: The individual responsible for determining acceptable entry conditions exist, for authorizing entry, overseeing entry operations, and for terminating entry as needed. The entry supervisor may also serve as the attendant or authorized entrant.

Confined Space: A space or work area not designed or intended for normal human occupancy; having limited means of entry and exit; and is large enough so configured that an employee can bodily enter and perform assigned work.

Entry: The action by which a person passes through an opening into a permit required confined space.

Entry permit (permit): The written or printed document that is provided by the employer to allow and control entry into a permit space. The permit shall meet the requirements of 29 CFR 1910.146(f).

Hazardous atmosphere: An atmosphere with the following conditions:

A. Greater than ten percent (10%) of the Lower Explosive Level (LEL).

B. Airborne combustible dust greater than LEL (dust obscures vision at a distance of 5 feet or less).

C. Atmospheric oxygen concentration is less than 19.5 percent (19.5%) or greater than 23.5 percent (23.5%).

D. Atmosphere concentration of a substance which could result in employee exposure greater than the permissible exposure limit (PEL) or a published exposure limit.

E. Any atmosphere condition that is immediately dangerous to life and health (IDLH).

Permit-required confined space (permit space): A confined space that has one or more of the followi characteristics:

A. Contains or has the potential to contain a hazardous atmosphere.

B. Contains a material that has the potential for engulfing an entrant.

C. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly convergi walls or by a floor which slopes downward and tapers to a smaller cross section.

D. Contains any other recognized serious safety or health hazard.

Entering a confined space requires the following to be completed:

1. **Hazard identification** - Identify and evaluate each hazard of the permit space, including determinatio of severity.

2. **Hazard control** - Establish and implement the means, procedures, and practices by which the permi space can be entered safely.

3. **Permit** - An entry permit will be completed before entry of a confined space.

4. **Employee information** - Signs shall be posted at permit spaces to notify employees that only authorizec entrants may enter the permit spaces or that an entry permit is required.

5. **Prevention of unauthorized entry** - Prevent unauthorized employee entry through such measures as training or by posting sings and barriers, as necessary.

6. **Employee training** - Train employees, as provided by this standard, so that supervisors, attendants, authorized entrants and personnel authorizing entry can work safely in and around the permit space.

7. **Equipment** - Provide, maintain, and ensure the proper use of the equipment necessary for safe entry, including testing, monitoring, communication, and personal protective equipment.

8. **Rescue**- Ensure that the procedures and equipment necessary to rescue entrants from permit spaces are implemented and provided.

9. **Protection from external hazards** - Ensure that all pedestrian, vehicle or other barriers necessary to protect entrants from external hazards are provided.

10. **Duty to other employers** - Ensure that, when an employer such as a subcontractor plans to send

employees into a permit space that is under the control of another employer (host employer), the ho employer provides the subcontractor with all available information on permit space hazards, safet rules, and emergency procedures of which the contractor needs to be aware to comply with th standard.

In addition, the following rules will be adhered to:

1. Confined-space work shall be undertaken only under controlled traffic conditions where applicable.

2. Vehicles shall not be left running near confined space work or near air moving equipment being used fo confined space ventilation.

3. Smoking in confined spaces is prohibited.

4. Verify that any hot work (welding, burning, open flames, or spark-producing operation) that is to b performed in the confined space has been approved and the permit is attached to the confined-spac permit. The hot work authorization shall be noted prominently on either the entry or on a separate ho work permit that is attached to the confined-space permit.

Procedures

1. Measures necessary to prevent unauthorized entry will be implemented.

2. Identify and evaluate hazards of permit spaces before employees enter the space. This will be implemented in the project pre-planning stages. The Site Safety and Health Officer will provide assistance.

3. The following should be considered before entry into a permit space. To ensure a safe entry the necessary procedures and equipment to complete the items below should be used throughout the entry.

   a. Acceptable entry condition shall be determined based on the characteristics of the space.

   b. The permit space shall be isolated and completely protected against the release of energy or material.

      This can be accomplished by:
      - Blanking or disconnecting mechanical linkages
      - Misaligning or removing sections of lines, pipes, or ducts

   c. Barriers should be provided to protect entrants from external hazards.

4. The following equipment shall be provided for each permit space entry. The equipment shall be adequately maintained, calibrated in accordance with manufacturers specifications and employees who use the equipment shall be adequately trained.

a. Air monitoring equipment to properly measure O_2, LEL, and toxic atmospheres.

b. Ventilating equipment such as blowers.

c. Communications equipment.

d. Personal protective equipment such as head protection, eye protection, hearing protection, hai protection, foot protection, respiratory protection or full body protection.

e. Ladders, lighting, barriers, shields.

f. Rescue and emergency equipment shall be provided by outside rescue services.

5. The atmosphere within the permit space shall be monitored remotely before entry into the permit spac

6. At least one attendant is in communication with the entrant through the entire entry process.

7. Employees who enter or attend the permit spaces shall be designated and meet the E/CGL Confine Space policy requirements.

8. Rescue and emergency services shall be determined before entry.

9. Non-entry rescue may be performed by the C.S.A.. This consists of a tripod or other proper anchorag to which a retrieval system is secured to allow the attendant to extricate the entrant from the space in ar emergency. The attendant does not enter the space to perform this type of rescue.

10. Entry permits (Enclosure 1) will be prepared and used during each permit space entry. The permit should be written and kept on file for a minimum of one year.

11. Site specific procedures must be in place to conclude any entry. At a minimum this will include closing the permit space, removing equipment and canceling the permit.

12. Procedures for each subcontractor shall be implemented when more than one subcontractor has employees in a permit space simultaneously.

General Provisions

- Confined spaces shall be identified with a posted sign reads: *Danger: Confined Space, Entry By Permit Only.*

- Only personnel trained and knowledgeable of the requirements of these Confined Space Entry Procedures will be authorized to enter a confined space or be a confined space observer.
- An Entry Permit (EP) must be issued prior to the performance of any work within a confined space. The EP will become part of the permanent and official record of the site.
- If natural ventilation is not adequate within the confined space prior to initial entry and for the duration of the EP, positive/forced mechanical ventilation may be required. However, care should be taken not to spread contamination through forced ventilation.
- If flammable liquids may be contained within the confined space, explosion-proof equipment shall be used. All equipment shall be grounded and bonded.
- All sources of ignition must be removed prior to entry if flammable or combustible conditions exist.
- Hand tools used in confined spaces shall be in good condition, explosion-proof and spark-proof, when flammable condition exist and selected according to intended use. Where possible, pneumatic power tools are to be used.
- Smoking shall be prohibited in and near all confined spaces.
- Hand-held lights and other illumination utilized in confined spaces shall be equipped with guards to prevent contact with the bulb and when flammable/combustible potential hazard exist. They must be explosion-proof.
- Compressed gas cylinders, except cylinders used for self-contained breathing apparatus, shall not be taken into confined spaces. Gas hoses shall be removed from the space and the supply turned off at the cylinder valve when personnel exit from the confined space.
- If a confined space requires respiratory protective equipment or where rescue may be difficult, body harnesses, and lifelines will be used. The C.S.A. shall be provided with the same equipment as those working within the confined space.
- A ladder is required in all confined spaces deeper than the employee's shoulder. The ladder shall be secured and not removed until all employees have existed the space.
- Only NIOSH/MSHA approved self-contained breathing apparatus or airline respirators equipped with a 5-minute emergency air supply (egress bottle) shall be used in confined spaces contained hazardous atmospheres or with conditions determined to be immediately dangerous to life and health.
- Where air-moving equipment is used to provide ventilation, chemicals and moter exhausts shall not be located in the vicinity to prevent introduction of harmful or hazardous vapors into the confined space.

- Vehicles shall not be left running near confined space work or near air-moving equipment being used fi confined space ventilation.

Entry Supervisor Duties

1. Know the hazards faced during entry.
2. Verifies that all air monitoring is completed and all equipment is available before entry.
3. Terminates the entry when potential hazards are identified or of the end of the entry.
4. Verifies that rescue services and a means of contacting them are available.

Authorized Entrant Duties

1. Know the hazards faced during entry (i.e. sign and symptoms of exposure, routes of entry).
2. Properly trained in use of all equipment associated with the entry.
3. Communicates with the attendant.
4. Alerts the attendant when the entrant recognizes a warning sign or symptom, dangerous situation, or prohibited condition.
5. Exists the permitted space when the attendant, or entry supervisor orders an evacuation, an evacuation alarm is sounded, or a condition in #4 above exists.

Attendants Duties

1. Know the hazards faced during entry (i.e. sings and symptoms of exposure, routes of entry).
2. Is aware of behavioral effects of hazard exposure in entrants.
3. Maintains an accurate count of authorized entrants in the permit.
4. Remains outside the permit space during entry operations until relieved by another attendant.
5. Communicates with authorized entrants.
6. Monitors activities inside and outside of the permit space. Orders the evacuation of entrants when attendants detects a prohibited condition, behavioral effects by the entrant(s), a situation outside the space that could endanger the entrant, or the attendants cannot effectively and safely perform the duties.

7. Advise unauthorized persons to leave the area.

8. Perform non-entry rescue procedures.

9. Summon rescue and emergency services when assistance is needed to exit the space.

10. Performs no functions that may interfere with these duties.

Enclosure # 2

CONFINED SPACE ENTRY PERMIT

CONFINED SPACE ENTRY PERMIT

1. LOCATION OF CONFINED SPACE: DATE/TIME:

PURPOSE OF ENTRY: DURATION:

AUTHORIZED BY: EXPIRES ON:

ATTENDANT(S):

2. AUTHORIZED ENTRANTS		

MEASURES FOR ISOLATING & EQUIPMENT	N/A	YES	NO	MEASURES FOR ISOLATING & EQUIPMENT	N/A	YES	NO
Lockout - DeEnergize - Tagout Equipment				Self-Contained Breathing Apparatus (SCBA)			
Line(s) Broken - Capped - Blanked				Air-Line Respirators w/Emergency - Escape Capability			
Purge - Flush & Vent				Air-Purifying Respirators and Cartridges			
Ventilation				Resuscitator/Inhaler			
Secure Area (Post & Flag)				Communications Equipment			
Full Body Harness w/ "D" Ring				Protective Clothing			
Tripod Emergency Escape Unit				Head/Eye/Hearing Protection (circle type(s))			
Lifelines				Hot Work Permit Required			
Fire Extinguishers				Direct Reading Atmosphere Monitor(s)			
Lighting (Explosion-Proof)							

3. **ATMOSPHERE MONITORING**

TEST(S) TO BE TAKEN	Y	N	ACCEPTABLE ENTRY CONDITION (CIRCLE APPROPRIATE LEVEL) TLV	PEL		TEST NO./DATE/TIME 1 Date ___.m.	2 Date ___.m.	3 Date ___.m.	4 Date ___.m.	5 Date ___.m.	6 Date ___.m.	7 Date ___.m.	8 Date ___.m.
Oxygen			19.5 - 23.5%										
Combustible Gas			Below 10% LEL										
Carbon Monoxide			0-25PPM	0-50PPM									
Hydrogen Sulfide			0-10ppm	0-10ppm									
Hydrogen Cyanide			0-10ppm	0-10ppm									
Sulfur Dioxide			0-2ppm	0-5ppm									
Ammonia			0-25ppm	0-50ppm									

Individual Conducting Test : _____

4. INSTUMENTS USED	NAME	CALIBRATION	TYPE	IDENT. NO.

5. SAFETY STANDBY PERSON(S)	Name	Ck. No.

Supervisor authorizing all above conditions satisfied _____